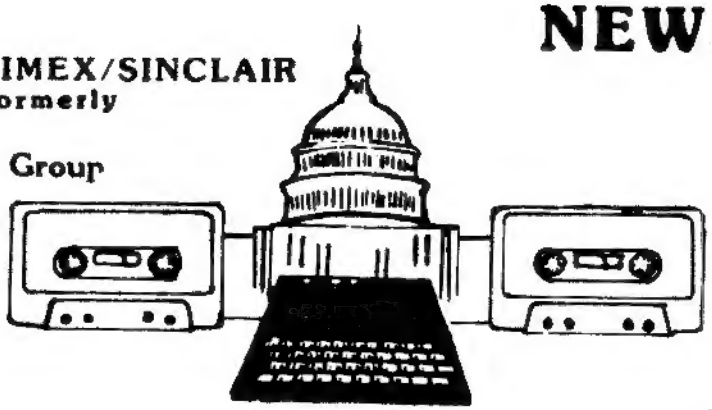
CATS NEWSLETTER

CAPITOL AREA TIMEX/SINCLAIR USERS GROUP :Formerly Prince George's Timex/Sinclair User's Group



VOL 2 NO. 10

Jan-February 1985

** CONTENTS **

President's Column

Business... & Pleasure

If your lable shows that you haven't paid, this marks the last copy you will recieve, if we don't get your $15.00 dues for the year.

Since I've been promoted back to Editor again, temporarily, I would like to thank all the club members that have contributed material for this issue. There was actually more than I could fit in, which means that some of the programs will have to wait 'till March. This is wonderful! Keep it up!

If you're trying to think of a project, how about working up a VU-CALC application that will calculate taxes? IRS2, which makes a reprise showing in this issue (as revised by R. Parker), was basically an array with formulas and prompts hung along side - exactly what VU-CALC is set up to do. I'll give a copy of Robert Masters' VU-CALC and VU-FILE the Organizer to the best implementation of a 1040 calculator.

Member Updates

Ned Beeler, who gave so much time and enthusiasm to the club last year, has moved, with no forewarding address. If anyone knows where he is, let me know. Jules Gesang is recovering on schedule from his heart attack, and, as of this writing (1-19) should be getting out of the Hospital in the next week. Bernie Gerber is recovering from a major operation as well. Jules says that they'll be pacing each other in their recovery. Al Flynn, who put his poor Sinclair ZX81 to more use than any of us, died of lung cancer last December 12, 1984. It was only diagnosed in September. Cigarette smoking also can damage disk drives.

Doings

Hope you got to see the NASA hamfest on the 26th. As a further commemoration of the tenth anniversary of the microcomputer, the Trenton State College is sponsoring its tenth annual Computer Festival on April 28 & 29. This is one of the oldest, and last non-commercial computer fairs around. It sounds like it will be HUGE (indoors + 4 acres of fleamarket) and CHEAP ($7.00 for 2 day's admission). I'd like to go - let's carpool!

Last Month's Meeting...

Was quite a success. For our group discussion period, we discussed the future of CATS. The gradual shift to a variety of other machines was brought up, but a consensus was reached. We decided that CATS should make an effort to review available products (dear reader, this means you). In addition, we should keep the T/S machines as the focal point of the club, while bringing a variety of other machines to the meetings. In line with that, Tucker Sharpe demo'd his NEC notebook computer, and John Conger reviewed Fire in the Valley. In the small group sessions, Tom Bent brought his disc-based ZX 81 system in, and demonstrated its workings to an eager crowd. At the same time, another member demonstrated his program, while I did a demo on string slicing.

Next Month...

Who knows! I'm talking to a variety of people, but I can't say what will develop. If you have something to present, either to the whole group, or to a subset, please phone a few days before - 589-7407.

Member's projects:

Tom Cover is organizing a group buy of the ZXL printer interface. At this point the feasibility is being evaluated - if it works, it will offer an alternate Centronics I/F for the 2068.

In addition, don't forget to look at Pete Geller's letter re. Spectrum ROMs.

Well, that's enough for now. Happy coding, and may all your bugs be little ones!

Mark E Fisher

1984

AD RATES CATS NEWSLETTER

	1X	3X	6X	12X
FULL PAGE	$100	294	570	1080
HALF PAGE	55	161	313	594
QUARTER PAGE	30	88	171	324
BUSINESS CARD	15	43	81	155

(7" WIDE BY 10" LONG MAXIMUM SIZE. CAMERA READY MATERIAL IN BLACK AND WHITE.)

WE WILL MAIL YOUR ENCLOSURE. READY TO MAIL WITH NEWSLETTER. WE WILL CHARGE ACCORDING TO SIZE OF ENCLOSURE. ASK US FOR QUOTE AND NUMBER NEEDED. (8.5" X 11" SIZE-$25 PER ISSUE.)

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Copy Editor: Mark Fisher
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Writers:
Associated Press
John Conger
Consumers Union
Mark Fisher
Pete Geller
David Kulp
Jim Mackenzie
R. Parker
Jesse Peeler
Allan Pollock
Roald A. Schrack
Timex
George White

If you've joined in the last few months- Renewalls are only $7.50 (For the rest of us, it's $15.00)

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Important Dates:

Newsletter d/l	Meeting
	February 9
February 15	March 9
March 15	April 13
April 19	May 11
May 17	June 8

See you there!

****

Resources for T/S Owners

As Timex owners, we have a number of periodicals that cater to the Timex/Sinclair community. It can pay to subscribe to several of these magazines/newsletters - what one notices may very well be ignored by the rest.

Computer Tracer Magazine
Folksy, beginner - intermediate, a variety of machines covered; 30% T/S
$15.00/yr (12 issues) c.o. Lambert Publishing
1704 Sam Drive
Birmingham, AL 35235

SyncWare News
If you would like to dig deep into the T/S machines, this is the place to go for information. Hardware & software, MC & BASIC. Edited by a member of CATS!
$16.95/yr (6 issues) c.o. Tom Woods
P.O. Box 64
Jefferson, NH 03583

T-S Horizons
A general purpose magazine - SYNC on a more realistic scale. Lots of reviews, some overoptimism.
$15.00/yr (12 issues) c.o. T-S Horizons
Subscription Dept.
2002 Summit St.
Portsmouth, OH 45662

Triangle Sinclair User's Group
Lots of products & projects; big newsletter.
$10.00/year ($12?)(12 issues) c.o. Doug Dewey
206 James St.
Carrboro, NC 27510

SINCUS
Small but active (3 meetings/mo.!) Good info in N/L, including highlights from other N/L.
$8.00/yr (12 issues) c.o. SINCUS
P.O. Box 523
Oswego NY 13827

If you know of any other good newsletters, write them up! Next month, we'll include the English magazine addresses.

SPECTRUM/ROMSWITCH PROGRAM NEWS(January)

This page is intended for those TS-2068 users who own or are contemplating the purchase of a G. Russell Electronics ROMSWITCH. The switch allows the 2068 owner to use the Spectrum 3 Rom inside the machine alongside the 2068 Rom. This in turn allows quite a few English Spectrum programs to be utilized on the 2068.

January brought in an additional 14 Spectrum programs to test on the ROMSWITCH. I will say that the quality per program was very high this time, with almost no clunkers from a content viewpoint.

After testing Spectrum programs for a couple of months now, I'd say there is no question that the English are way ahead of us in game development versus the game programs that TIMEX was selling for the 2068.

We're still looking for more educational Spectrum programs to test on the Romswitch, but I'm happy to report that two additional Spectrum educational software companies have agreed to let us see if their programs will work on our 2068.

So, for this month all 14 Spectrum programs loaded and ran. Here they are with an occasional editorial comment:

THE BLACK PLANET(wow!)
3-D TANX
SPACE INTRUDERS(fun invaders)
EARTH DEFENCE(good defenders)
HALLS OF THINGS(look out!)
MAGIC MOUNTAIN(adventure)
DICTATOR(funny & addictive)
DIMENSION DESTRUCTORS(runs 98%)
NOWOTNIK PUZZLE(Rubik lives!)
SPECTRES(ghost maze)
TRANS AM
SPECTRUM CHESS II
METEOR STORM
THE FOREST(impressive)

Here is December's Spectrum list:

FIGHTER PILOT
NIGHT GUNNER
SPECTRUM VOICE CHESS
LEARN TO READ #1
LEARN TO READ #4
ZIP-ZAP
THE ALIEN MAZE
GREEDY GULTCH
PANDEMONIA
CRAWLER
ORPHEUS
WOODS OF WINTER
THE GREAT DETECTIVE
ZARAKS
RESCUE
ASTRON(mach. code assembler)
AHHH!!!
MANIC MINER
ATIC ATAC
JET SET WILLY
I'M IN SHOCK
DRAUGHTS(checkers)
DERBY DAY(horse race)
GRAND NATIONAL(steeple chase)
OMEGA RUN
SPECTRAL INVADERS
STONKERS
BIRDS AND BEES
RABBIT SHOOT
DOMINOES
ARCADIA(Runs 98%)
TASWORD TWO
TEST MATCH(cricket)

These programs crashed in the night:

CHEQUERED FLAG
WARLOCK'S TREASURE
GORGON
PENETRATOR(spectrum)
GALACTIC PATROL
STARGAZER
THE KNIGHT'S QUEST

Anyone who has been able to load and run the programs that we list as crashed, please drop a note to the editor and we will periodically print an updated list.

The Sears 13" Monitor/TV

Background

As new 64 column programs become available for the 2068, more and more people are looking for a television that can produce legible print on the screen in that mode. The solution, of course, is summarized in three letters; RGB. An RGB monitor is easily able to handle the fine detail that is required to produce legible type. Unfortunately, RGB monitors have been expensive - about $600.00. In addition, they are single purpose units - there's no way you're going to unhook it to watch your favorite game, as you might with a standard set.

The rules have changed now. Sears has produced its Model 4084. This set is both an RGB monitor and a high quality standard TV - for the price of an average 13" color set.

An important consideration for Timex users is the amount of overscan the set provides. In broadcast TV, sets typically paint a picture that is 12% bigger than the tube's face. This keeps the sync pulses, and ragged edges from showing on the screen. The Timex was designed with this overscan in mind, and thus leaves a 15% border around the picture. OK, they should match up, right? Well - they do, if the signal is going to a commercial TV. Monitors typically are built with no overscan. They are designed to recieve carefully controlled signals, and to display information from edge to edge. Now, when you get your 2068 hooked up to your new $600.00 RGB monitor, you will discover that the image is much smaller than you expected, as the Timex is restricting itself to what it assumes is the clearest part of the display, the center; while the monitor is restricting its scan so that you can see every bit of the signal that's being sent. The Sears set offers optional compression in RGB mode - in other words, you can leave it alone, and see your text from edge to edge!

The CU's Review

The following information is abstracted from Consumer Reports, January '85. The Sears 4084 is a 13" color TV, with additional RGB input. It offers a varactor tuner with 12 channels, a room light sensor, one button color control (judged difficult to adjust), and has antenna, composite video , and RGB inputs.

CU compared the Sears set to 20 other general purpose TV's. They found that the Sears was "by far the best color monitor - even though it was near the bottom of the ratings." The ratings were based on picture quality, and should be taken with a grain of salt - all the sets were close together. Sears had the sharpest picture, with above average ratings for picture clarity, freedom from geometric distortion, fine scan lines, excelent automatic color control, and fringe UHF reception. It was down graded for poor tone quality, poor black-level retention, and poor VHF fringe reception.

Conclusions

It looks like the Sears 4084 would be a good bet. the only hedge is that there are other RGB-compatible sets becoming available - CU promises to review them in a future issue.

MF

Computers Use the Phone

Calls to Coke Bottler Baffle Switchboard

WASH. POST 1/16/85

Associated Press

FAYETTEVILLE, N.C., Jan. 15—A municipal building was supposed to be closed and empty at night and on weekends, but computer records showed hundreds of telephone calls, some within seconds of each other, being placed from two phone extensions.

It wasn't a burglar. It was two computerized Coke machines trying to phone home.

City officials couldn't figure out how anyone was getting into the Sanitation and Fleet Maintenance building after hours to place the hundreds of local calls to the same number, as shown on a switchboard computer printout.

Police found that the number being dialed was the local Coca-Co Bottling Co. That led to the tw Coke dispensers.

Bob Johnson, who runs the se vice department at Coca-Cola Bo tling, said the machines were ou fitted with a computer system tha automatically called another com puter each day, reporting how man bottles had been sold. This allowe the distributor to know when th machines needed refilling withou making unnecessary stops.

If the callers heard a busy signa they would disconnect and cal again—and again.

Johnson said the system was dis connected last week, after it wa discovered that the machines had a "manufacturer's flaw."

ROMSWITCH/SPECTRUM PROGRAM NEWS(February)

This page is intended for those TS-2068 users who own or are contemplating the purchase of a G. Russell Electronics ROMSWITCH. The switch allows the 2068 owner to use the Spectrum 3 Rom inside the machine alongside the 2068 Rom. This in turn allows quite a few English Spectrum programs to be utilized on the 2068.

With the events leading up to a combined Jan/Feb newsletter we did have the benefit of testing an additional 15 Spectrum programs on the ROMSWITCH equipped 2068.

If you have been following the money news, you already know that the relation of the English pound to the U.S. dollar is becoming very positive for us "Yanks" who are taking advantage of the Spectrum programs available. At press time the pound was bouncing around $1.11 with certain financial prognosticators predicting the dollar to be worth more than the pound in 18 months.

Those of you waiting patiently for an interface to make the Spectrum 1 periferal work on the 2068, get ready. There are at least two or three U.S. outfits putting the final touches on their pc boards and with a little luck, in a couple of months we may be able to plug in the Spectrum 1 add-on which has Tasword 2, Masterfile, and Games Design on ROMS, a couple of ports in the back and one Micro-drive attached.

Now wait, let's not get too excited. We don't have any idea of price. This sounds like a good add-on, especially since you will be able to add additional Micro-drives, but you'll probably have to be really serious about using your 2068 to put out the bucks for this elaborate add-on.

Anyway it's sure nice to know that other folks "out there" are continuing to develop to some degree the 2068.

Well here is February's Spectrum program round-up.

Programs that loaded and ran:

PAINT BOX(art)
SCREEN MACHINE
SCHIZOIDS
MAKE-A-CHIP(teaching electronics)
BACKGAMMON
HORACE GOES SKING(no joy stick)
SURVIVAL(ed. science/game)
MUSIC TYPEWRITER(wow!)
LEARN TO READ #5
LEARNING BOX-Red Riding Hood/ Goldilocks
PSION-HORIZONS(Spectrum Demo)

These programs said "NO! NO! not in my rom you won't":

SINCLAIR ZX CHESS
T-S GAMMA(tool kit)
SPECTRUM ZEUS ASSEMBLER
TERMI-TOY

Anyone who has been able to load and run the programs that we list as crashed, please drop a note to the editor and we will periodically print an updated list.

Magazine Review: Computer Trader Magazine.

Remember the good old days? 35 cent gas, 5 cent telephone calls, and $1.50 an hour wages? Remember when Byte was thin? Have you ever wondered whether the new magazine you were trying to read was published by Cosmo, since you couldn't tell the copy from the ads? Are you sick of two column inches of text sandwiched between multi-page full color glossy ads for software that doesn't exist yet? (and won't run in anything less than 512K)

If you have looked in vain for an escape from the New York Media Magazines, I have a ray of hope for you. Computer Trader Magazine. If you have any sort of personal computer, or are involved in amature radio, check it out. It's not New York, and it's not Big Media; it's a little operation run by a fellow named Chet Lambert, out of Birmingham AL. And it shows. The contents page appears twice: once on the cover, a la old National Geographic, and again inside. It is printed in black and white, and is labeled CONTENTS. Each of the articles are clearly labeled. Most of the text is made up of continuing columns, with a smiling photo of the author, and his address. The body of the text is word-processed through a daisy-wheel printer, in a two column format. It's a full size magazine, with two color covers and glossy paper. My only complaint is that everything is right justified, making for big spaces between words at times.

Content

CTM makes an effort to cover a variety of computers with each issue. There is often a slant toward using them in amature radio. I've seen three issues; each of them had at least seven articles and columns specifically for the Timex. Moreover, many of the other columns and articles acknowledge the Timex. For instance, variations in Timex code will be mentioned in a Kayoro article. The recurrent themes are; doing it yourself, doing it cheap, and sharing what you've learned with the others. Articles tend to be short, but big projects aren't avoided; they're just split up over a few months. Beginners need have no fear of being ignored. There's a big "Letters" column, where questions and clarifications from the authors take place.

The last part of CTM is the unclassified. It's split into three columns, and also right justified, making for occasional large gaps in a line. But it has an immense variety of stuff for sale. What's more, it's free to subscribers.

The columns tend to be homey; more like a letter from your brother than a corporate memo. But that doesn't mean they stint on info - there's a lot of experience out there, and it comes across.

Advertizers

The crowd you knew and loved from SYNC is back, encouraged by Chet's moderate prices. In addition, there's a lot of HAM stuff as well. I didn't see any info on subscription size, but I know that he's been growing steadily for three years, and it looks like he'll be around for a while longer. I think that advertizers should be happy with his performance.

How to get it:

Send $15.00 to LAMBERT Publishing House, 1704 Sam Drive,Birmingham, AL, 35235.

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SOFTWARE REVIEW

By [illegible]

ZX 81 TS 1000, TS 1500, 1K - 16K
Item Software cassette ($24.95)
From JRC Software
PO Box 448
Scottsburg, IN 47170

(812) 752-6071 (About 8:30 PM)
Please include a SASE

"Super Tape" is the type of tape that Timex should have included with the computer. There are 45 programs on a 30 minute tape, most of them 2K. They run from "Tape Name Reader" to "Flower." The large number of programs has something that will appeal to the beginner aswell as the experienced buff, I found more than a dozen that I liked.

The instructions are on a 6 foot Timex printout, and are rather sketchy (not surprising due to the number of programs). I have had no problem loading any programs, and I enjoy running them. The tape arrived with a money back guarantee five days after I mailed the check.

Unclassified

FOR SALE
ZON-X Sound generator, for T/S 1000. Three channel sound chip, open for software control. Self contained, w/speaker, powered from bus. Perfect, new condition. Cost $50.00, sell for $30.00 589-7407.

THREE DIMENSIONS!

Here is a 3-dimensional plotting program that removes hidden lines. You can easily revise the program to plot any function you desire. For illustrative purposes I have plotted the function: y=250/(r+3) * cos(r/10) where r=sqr(x*x+z*z).

I have chosen to represent the axis that is supposed to be sticking out of the paper (the z axis) by a vector depicted in the plane of the paper (the x,y plane) by a line 30 degrees to the x axis. The values plotted are then xp and yp as calculated on lines 70 and 80. This is a convenient and widely used representation. Other representations can be tried which have the effect of looking at the object from different angles. The formulae for the general rotation by angle A about the y-axis and then by angle B about the x axis is:

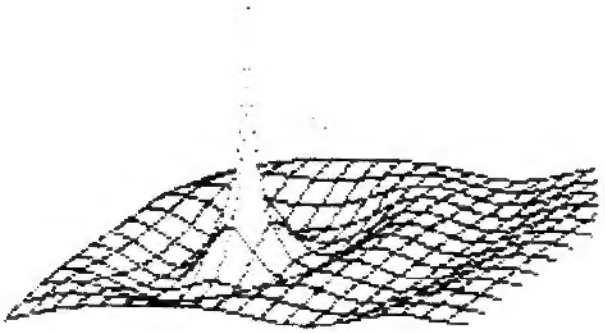
```
xp=x*cos(A)  - z*sin(A)
yp=x*(-sin(A)*sin(B)) + y*cos(B) -
     z*(sin(B)*cos(A))
```

The commonly used isometric projection is achieved with A= 45 ° and B= 35.27 °.

The hidden line elimination is achieved by saving in the array V(xp) the largest value of yp plotted at xp. If the point to be plotted has a value of yp less than that of V(xp) then the point is not plotted. The suppression of a point on a particular x-scan is noted by placing a 1. in the array U(xp). This information is then used to determine if the short sections of the z-scan should be plotted. Watching how the code draws the picture will help a great deal in understanding.

The code as written is in need of cleaning up. Lines 140 to and including 190 are essentially repeats of lines 50 through 82 so a subroutine could have been used.

Roald A. Schrack



```
  20 DIM V(256)
  22 DIM U(256)
  30 FOR Z=0 TO 120 STEP 10
  32 FOR K=1 TO 256
  33 LET U(K)=0
  34 NEXT K
  40 FOR X=1 TO 200 STEP 1
  50 LET R=SQR ((X-60)*(X-60)+(Z
-60)*(Z-60))
  60 LET Y=250/(R+3)*COS (R/10)+
15
  70 LET YP=Y+.433*Z
  80 LET XP=X+.75*Z
  81 IF (XP>=255) THEN GO TO 100
  82 IF (YP>175) THEN LET YP=175
  84 IF (YP<V(XP)) THEN LET U(XP
)=1: GO TO 100
  86 LET V(XP)=YP
  90 PLOT XP,YP
 100 NEXT X
 115 IF Z=0 THEN GO TO 400
 120 FOR X=1 TO 200 STEP 10
 130 FOR W=Z-10 TO Z
 140 LET R=SQR ((X-60)*(X-60)+(W
-60)*(W-60))
 150 LET Y=250/(R+3)*COS (R/10)+
15
 160 LET YP=Y+.433*W
 170 LET XP=X+.75*W
 180 IF (XP>=255) THEN GO TO 220
 190 IF (YP>175) THEN LET YP=175
 200 IF (U(INT (XP))=1) THEN GO
TO 220
 210 PLOT XP,YP
 220 NEXT W
 230 NEXT X
 400 REM
 410 NEXT Z
 500 STOP
```

Editor's note

For those interested in helping the newsletter out, read this.

This comes close to being an ideal submission. Mechanically, the copy was dark, and clean. Editorially, the program is short, with a text explanation of some of the logic behind the program. This text is enough to give the reader a feeling for how much time he would want to invest in understanding the program.

Improvements? Very few people go to the trouble, but adding REMs to explain the function of each element would be helpful. When readying a program for the newsletter, take a little time to review the flow of the program, to see if an outsider could easily understand it. Also, renumbering to an even interval would speed typing it in. Don't forget - use Radio Shack thermal paper!

MF

BIG PRINT

```
  1 BORDER 0: PAPER 0: INK 7: C
LS
  5 INPUT "Input message ";a$
 10 INPUT "Width?";w
 20 INPUT "HEIGHT?";h
 25 INPUT "Location?(x,v)  ";x;
"  ";v
 26 LET x=x*8: LET v=175-v*8
 30 FOR J=1 TO LEN a$
 35 LET c=CODE a$(J)
 40 FOR s=0 TO 7
 50 LET p=PEEK(15360+c*8+s)
 60 LET v=128
 70 FOR g=x TO x+8*w-1 STEP w
 80 IF p<v THEN GOTO 150
 90 FOR f=0 TO w
100 FOR a=0 TO h
110 PLOT g+f,v-a
120 NEXT a
130 NEXT f
140 LET p=p-v
150 LET v=v/2
160 NEXT g
170 LET v=v-h
180 NEXT s
190 LET x=x+8*w
200 LET y=y+8*h
210 NEXT J
220 PRINT #1;"""Z""=Refine,""V"
"=CLS,Any Key=CONT"
225 PAUSE 0
230 IF INKEY$="V" OR INKEY$="v"
THEN CLS
240 IF INKEY$="Z" OR INKEY$="z"
THEN GOTO 300
250 GOTO 5
300 INPUT "Row?";v
310 INPUT "# of rows?";n
320 INPUT "Ink?(0-9)";i
330 INPUT "Paper?(0-9)";p
340 INPUT "Bright?(1-on/0-off)"
;b
350 INPUT "Flash?(1-on/0-off)";
f
360 DIM B$(704)
370 PRINT AT y,0; OVER 1; INK i
; PAPER p; BRIGHT b; FLASH f;B$(
TO n*32)
380 GOTO 5
9999 SAVE "big print" LINE 1
```

by
DAVID KULP

note: (enter # of times enlarged after width and height prompts.-Line 10,20)
0<=x<=32-Line 25
0<=v<=21-Line 25

TS1000/ZX81/TS1500

M/C GOTO BASIC

by George White

Yeah, sure Basic is convenient but it operates soooo slowly.

Yeah, sure Machine Code operates fast but it is so @%%¢* tedious to write.

Hybrid or mixed programs can serve as beautiful blends with execution jumping from Basic statements to M C operations when speed is needed and returning when things get complicated. The Basic part of the program can jump to any point in the M C portion by way of USR commands, as explained in the operating manual.

Dr. Logan & Dr. O'Hara, in their book The Complete Timex TS1000/Sinclair ZX81 ROM Disassembly, point out a section of ROM that can be used to let the Machine Code portion jump to any line of Basic. The sub-routine at 3718, named GO-TO-2, accepts a Basic line number (<10000) in the HL register and arranges the system variables so that a Z80 RET instruction will return control to that Basic line. To use: just load HL, call GO-TO-2, and return; or:

DEC	ASSEMBLY	HEX
197	PUSH BC	C5
33	LD HL,NN	21
LSB		LSBh
MSB		MSBh
205	CALL	CD
134	GO-TO-2	86
14	3718	0E
193	POP BC	C1
201	RET	C9

Where: LSB + MSB * 256 = Basic Line No.
e.g. LSB=44 MSB=1 : Basic Line No.=300

The PUSH BC / POP BC instructions are needed only when a value is returned to Basic from Machine Code, so 7 bytes are often sufficient to jump to any line in an effective hybrid program.

MY WORD! By John Conger

FIRE IN THE VALLEY

By Freiberger & Swaine

RUN - don't walk - to the nearest discount book shop and pick up your copy of the above. (About $7.85)

Aside from this month (Jan.) being the tenth anniversary of the first PC, the Altair, the full birth pangs of which are described in facinating detail, the 93 pictures included are alone worth the price of admission.

This paperback history of PC beginnings will keep you up nights reading true details of the counter-culture phone phreaks, money hungry entrepreneurs, idealistic hobbyists giving away valuable hard and software, and how and why the first companies went bust and how some unlikely characters rode towering waves of success.

Words and pictures show us who did what and how:

Teenagers Jobs and Wozniac developed the Apple, offered it to Atari and HP, who saw no market for personal computers, so they quit work with those companies and built Apple I in Jobs' garage.

Bill Millard, who develped the second PC based on the Altair design, the IMSAI, sold 13,000 of them before folding and going on to become the first computer Billionaire as owner of ComputerLand.

Felsenstein, who was Master of Ceremonies of the first PC Users Group: the HOMEBREW CLUB. He designed add-ons for Altair, built an improved PC (the SOL), and designed the first portable: the Osborne.

Osborne himself, who as the only engineer west of Philadelphia who could write understandable english, wrote the Intel technical manuals and a book called "An Introduction to Microcomputers". IMSAI included a copy with its computers as the Owner's Manual. He appeared at Homebrew meetings as his own publisher with a cardboard box of his books for sale.

Bill Gates, who with friend Paul Allen, while at Harvard wrote a BASIC for Altair and its 8080 processor in six weeks, and went into business as Microsoft - later writing MS-DOS, adopted by IBM as its PC operating system.

Gary Kildall, a consultant to Intel and professor of computer science at the Graduate Naval Academy, did programming of the 4004, 8008 and 8080 chips. He wrote the operating system for the 8080 two years before the Altair used it as the basis of a computer. His system was called CP/M. Intel thoght it had little commercial value so let Kildall market it as his own. Later he and a student wrote CBASIC and gave IMSAI rights to use it in exchange for one IMSAI computer and a printer.

And what happened to the Altair creator, Ed Roberts? The selling of kits got too much for him, so he sold out for $1,500,000., bought a farm in Georgia and entered medical school.

All these actors and more are painted in living colors in this facinating book. It highlights the drama and romance of the creation of a new industry, one which may change our culture forever. Read and enjoy! >

TS1000/ZX-81 COMMENTS

from Jesse Peeler, Costa Rica Users Group

TECHNICAL COMMENTS RELATING TO THE SINCLAIR ZX-81 AND THE TS1000 COMPUTERS AND EXTERNAL 16K RAMs

P.C. Boards are identified as issue 1 or issue 3. Both versions are found in ZX81s/only issue 3 is used in the TS1000. Electrically, they are almost identical. Issue 3 is an improved layout with a neater appearance. ZX81s have ICs mounted in sockets. The TS versions have their RAM chips hard soldered in place. All ZX81s were built in England or sold in kit form. Most TS were built in Portugal, but some were built in France. Quality control was highest on ZX81s. Poor quality control was observed on TS units, particularly those manufactured in Portugal. Fabrication defects most observed were faulty installation of the flexible PC 'fingers' from the keyboard into the special sockets. This defect has been observed in almost 100% of TS units manufactured in Portugal. Unsoldered/partially soldered ground busses were observed in both Portuguese and French units.

ICs(Integrated Circuits)

All units use a SCL (Sinclair Computer Logic) special purpose chip manufactured by Ferranti-ULA 2C184E. (Ferranti will not even acknowledge letters requesting info or cost).

All units use a D2364C ROM. CPUs vary. ZX81s have NEC P1Z300-151 or D780c-1. TS uses Zilog chips. All are Z80A chips in one form or another.

RAMs, INTERNAL

Most variation is seen with the RAM. In the ZX81, only 1K of RAM is built in. The PC board was cleverly designed to use either 2 @ 2114s or a single 4118. The 2114 is a 1K x 4 static RAM, whereas the 4118 is a 1K x 8 dynamic RAM. TS internal RAMs are all 2K in various versions from different manufactors, i.e., Toshiba 2016P-1, Motorola 2CM3881BC, NEC D4016D-1, Toshiba TMM 2016P-1.

TRANSISTORS

ZTX-313s are normally used I have found uMPS-2369s mounted in one computer. Also, I have found that an MPS-3563 works well as a substitute.

LOAD/SAVE Modifications

Change R-27 to 27ohms and C-11 to 0.015 mfd.

RAMs, EXTERNAL (16K variety)

PC boards are identified as issue 1, 2, or 3. Issue 1 and 2 are composed of 2 small PC boards that are folded inside the case. The differences between 1 and 2 are minimal-an additional diode and decoupling capacitor. Issue 3 combines many logic functions in a single Ferranti ULAIH035E chip to reduce the chip count by 5 and a single PC board is used, mounted in the same case. (Ferranti won't answer any questions on this chip either).

Transistor is either a ZTX-750 or ZTX-752. Recent French and Portuguese units used either a ZN6727 or MPS6727.

Wobble is often a problem-varies with units. The French units utilize a PC connector that has the tightest fit resulting in least wobble of all units observed. (Unfortunately, ZX80 and ZX81 were chosen as names of Sir Clyde's(sic) first two computers. There is a tendency to confuse these designations with Z-80 and Z-80A, which are the CPUs. Therefore, remember that Z-80A is a Zilog designator for their 4MHz CPU.)

POWER SUPPLY PROBLEMS

Once in a great while you get a noisy power supply. In such cases the bridge rectifier is first suspect. (A power supply can still partially function with 1 or 2 diodes bad- but it will b noisy!) You must crack open the power supply case and find th faulty diode(s) and replace them with 1N002 diodes. I've neve seen a capacitor fail, but it could and the replacement is 1000 mfd /16V capacitor.

I recommend cracking open the power supply whether there is problem or not. I can put a miniature SPST switch in series wit the output so that I can kill power at the power supply, rathe than pulling the plug at the computer.

To avoid drop-outs due to looseness of the power supply plug I removed the power jack completely. (Desolder it and remove.) then hard wire the power wires in place, tack them securely wit some silicone rubber and the power drop-out problem i completely solved. For an even neater job, one should conside putting a small male and female connector near the power suppl to disconnect the system. Watch out you don't reverse polarity!

Lifted from SINCUS (1/85)

UNCLASSIFIED

A + J MicroDrive stringy-floppy, with three micro wafers (20", 35", 50"). $125.00

ZX 81 with E-Z Key keyboard and case. 64K RAM from Independance Research and Channel 33 modulator. $125.00

ZX printer. $50.00

10 books - with the computer, $25.00; alone - $50.00

ZX 81 game packages 1,4; Flight Simulator. If sold alone, $25.00; with computer, $15.00.

If bought separately would have to pay over $500.00; all of the above, as a package, $300.00. All prices include postage anywhere in the US; money order or chasnier check to:

Robert Simons
3851 Furrow Creek Rd.
Anchorage, AL 99516

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Spotted in passing: Gemini 10X from Best Products; $249.00 + tax. Gemini clone from Protecto Enterprises (theres a name to inspire trust) @ $239.00 + $14 shipping. (312)382-5244. Also a Comstar TF 15.5" 18x18 (!) dot matrix printer, $339.00 + $14.95 shipping. VISA & Mastercard OK. Thanks, Tom Cover.

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Sale!!! Dec duel 5 1/4 Disk Dives ready to run will work with Arco Interface for T/S 1000. $210 firm. Mike Cohen 270-5991

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HIGGENBOTTOM RUMOR #7832...STRAIGHT POOP FROM TIMEX
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The Christmas issue of T-S HORIZONS claimed a big scoop from none other then David Higgenbottom claiming that he had confirmed a new and substantial investment and that he will be able to meet TIMEX's requirement for aquisition of TIMEX computer technology.

You'll recall that this is the person who has allegedly been on the verge of buying the rights to the TS 2068 since at least May '84 and planning to manufacture more of them, develop it more fully, and open "The Little Computer Stores" all over the U.S.

Personally, I hate rumors like this.

So the entire C.A.T.S. Newsletter investigative reporting team went to great lengths to get to the higgenbottom of this story--we picked up the phone and called what's left of the senior management organization at TIMEX Computers in Connecticut.

This is the straight information direct from the mouths of TIMEX:

- David Higgenbottom talked with TIMEX at least half a dozen times in 1984 about buying the computer technology.
- David Higgenbottom did contact TIMEX in December to relay the fact that he had a new investment.
- As far as real negotiations with TIMEX, that is premature and no hard negotiations have ever taken place.
- TIMEX has a lot of interest in seeing the TS-2068 pickedup by some group.
- TIMEX said that if a proper buyer presented a serious proposal, they would sell the TS-2068 rights.
- TIMEX did not poo-poo David Higgenbottom. As a matter of fact they indicated that of all the interested parties, Higgenbottom is the most active and so far has the clearest plan for what he would like to see happen.
- TIMEX wishes Higgenbottom well and hopes he will be able to come to them with a complete package.
- But nothing firm exists as of this time...period.

SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

The Backplane Map: Spectrum vs. 2068

The following diagram gives some idea of the differences between the Spectrum expansion bus and the 2068's.

Underside Spectrum 2068			2068	Component side Spectrum
	SIG GND	——+——	SIG GND	
A10	Spare to out	——+——	EAR	A15
A12	+15V	——+——	A7RB	A13
+5V	+5V	——+——	D7	D7
+9V	NOT USED	——+——	D7IN (NC)	
SLOT	SLOT	——+——	SLOT	SLOT
0V	PWR GND	——+——	D0	D0
0V	PWR GND	——+——	D1	D1
CR	CLOCK	——+——	D2	D2
A0	A0	——+——	D6	D6
A1	A1	——+——	D5	D5
A2	A2	——+——	D3	D3
A3	A3	——+——	D4	D4
IORQULA	A15B	——+——	INT	INT
0V	A14B	——+——	NMI	NMI
VIDEO	A13B	——+——	HALT	HALT
Y	A12	——+——	MREQB	M REQ
V	A11	——+——	IORQB	IO REQ
U	A10	——+——	RDB	RD
BUSREQ	A9	——+——	WRB	WR
RESET	A8	——+——	BUSACK	-5V
A7	A7	——+——	WAIT	WAIT
A6	A6	——+——	BUSREQ	+12V
A5	A5	——+——	RESET	-12V
A4	A4	——+——	M1	M1
ROMCS	DZOUT (nc)	——+——	RFSHB	RFSH
BUSACK	R	——+——	EXROM	A8
A9	G	——+——	ROMCS	A10
A11	B	——+——	BE	
	BUSISO	——+——	IOAS	
	VIDEO	——+——	SOUND	
	SIG GND	——+——	SIG GND	

This information will help hack Spectrum hardware onto a 2068. If you've never looked at such things, some of the conventions may be unfamiliar. Names with a bar overhead (such as INT) are read "not INT". It means that they are active low. In other words, their rest state is +5V; when they do their job, they drop to 0V. The other detail is the "B" after some entrys. This indicates a buffered line: rather than just loading the line out from the Z80 chip, additional circuitry has been added to reinforce the signal. Its not changed, but is able to travel farther, or service more other circuits than unbuffered lines.

mf

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Reading the Joysticks

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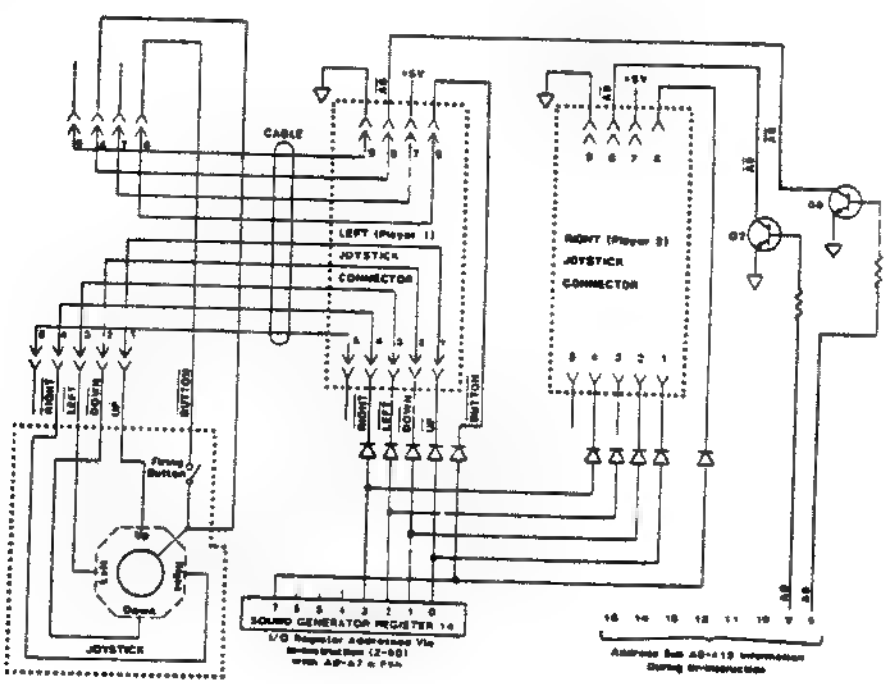
The following information is lifted out of the Timex Technical Manual, sections 2.1.7 and 4.3. This should work from within a Spectrum ROM environment.

The two joysticks are controlled via Register 14 (I/O Port A) of the Programmable Sound Generator Chip (see Sections 2.1.6 and 2.1.7). Address and data are passed via Ports 0F5H and 0F6H respectively. The joysticks are read by first addressing Register 14 in the PSG by writing a 14 (0EH) to Port 0F5H. The data is then read by executing an IN from Port 0F6H, having the port address in Z80 Register C and the joystick (player) number in Register B (number = 1 or 2). Note that PSG Register 7, Bit 6 is assumed to be zero, enabling I/O Port A for input. If you ever use I/O Port A for output (R7,B6=1), you will want to clear Bit 6 prior to any input operation.

Sample routine:

```
GETJOY  LD   A,0EH        Load A = 14
        OUT  A,(0F5H)     Address the joystick port
        LD   B,playerno
        LD   C,0F6H       Data Port address to C
        IN   A,(C)        Joystick data to A
        CPL               Complement to High Active
        AND  8FH          Get significant bits
```

The data read is LOW ACTIVE, i.e. all bits = 1 (byte=FFH) when the stick is at center and the button is not depressed. Figure 4.3-1 shows the interpretation of the data byte.



1984
TAX PREPARATION

INSTRUCTIONS

The MENU is the main driver of this program. In case of trouble enter, GO TO 1000. Entering STOP in response to a MENU prompt will halt the program.

The complete program is in three parts, IR51040, IR52 SCREENS, and IR52. The first is just a loader and the second, a pretty picture. The third part is the operating program. Any modifications to suit your needs should be made there.

Only MENU operations 1, 5, and 7 may be chosen as the initial responses. Operations 2, 3, 4, or 6 can only follow the previous choice of 1 as a second response. Operation 5 displays to either screen or printer and shows all the tax forms that have been setup with data. Operation 2 must be used with care as the initial query asks a crucial question. A yes answer clears all the files and should be so answered the first time through a new tax computation, and answered no at all following times. Operation 3 shows only the current form as selected in operation 1 on the screen. Operation 6 is similar for printer output. Operation 7 saves only the opeating program and tax data. Any changes to tax data in Forms A - U will be reflected in the 1040 Form T.

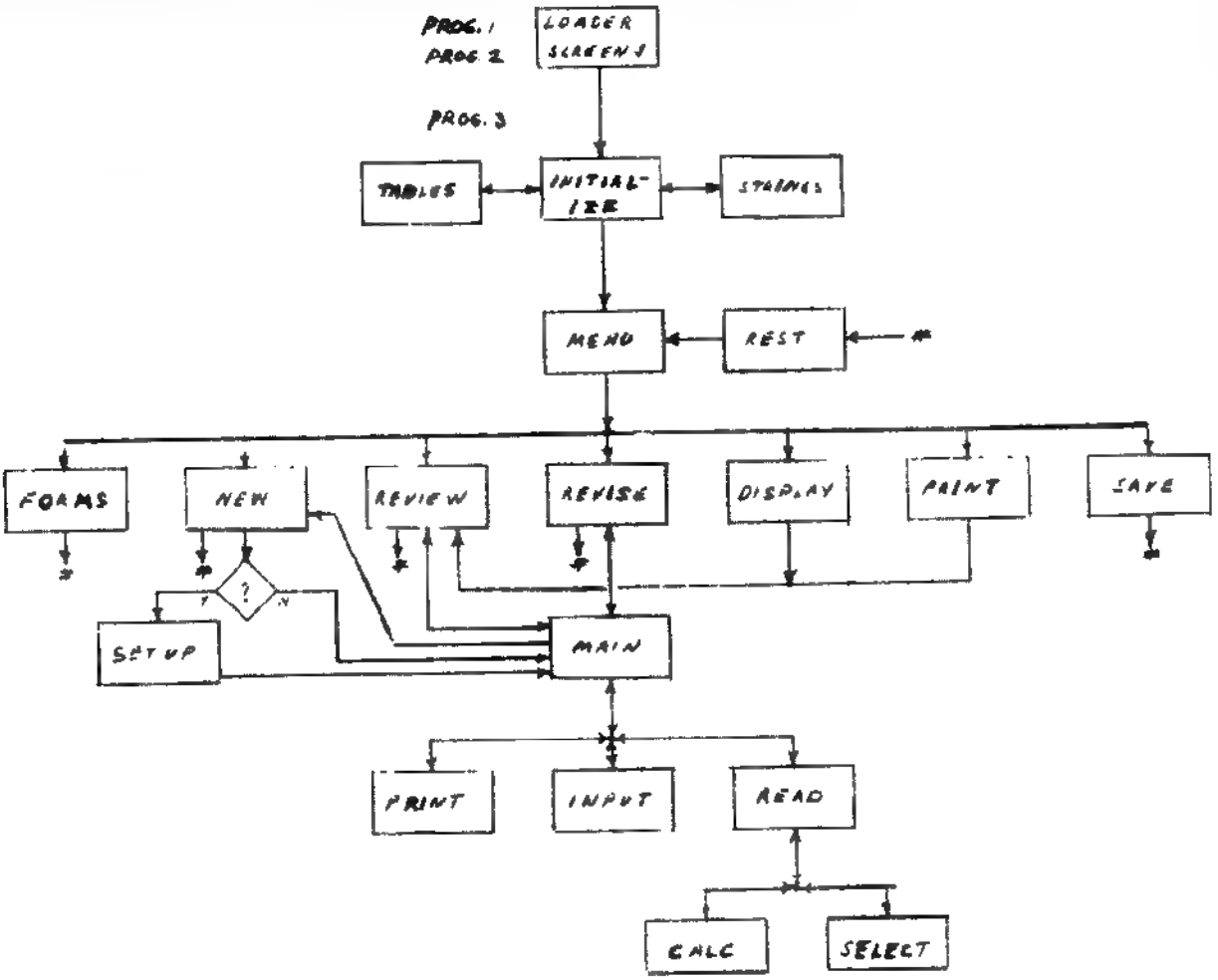
The tax table contains three items for each tax bracket; the bracket income limit, the bracket tax rate, and the tax accumulated from lower brackets.

Form SE is not now operative, but any form you need could be put there. All tax values are in the T array under the counter control shown in the DATA statement 5110. Changes in the string arrays must be reflected through the T array and the F portion of following strings.

1040 TAX RETURN PROGRAM
MENU

FIRST SELECT FORM (1),THEN SELECT OPERATION (2-4 or 6)

SELECT FORMS A,E,SE,T OR U	1
ENTER NEW DATA	2
REVIEW OLD DATA	3
CHANGE DATA	4
DISPLAY RESULTS	5
PRINT RESULTS	6
SAVE DATA	7



```
      1040 TAX CALCULATIONS

NO OF EXEMPTIONS(L6e)              3
WAGES (L7)                    $15000
INTEREST INCOME(L8)             $200
ST TX REFUND(L10)               $150
PENSION,ROLOVERS(L17)          $1000
TOTAL INCOME(L23)             $16910
IRA DEDUCTION(L26)             $1000
MARRIAGE DED.(L30)              $300
TOTAL DED.(L31)                $1300
ADJ GROSS INC.(L32)           $15610
MEDICAL MIN.(L4,A)             $780.5
MEDICAL DED.(L5,A)                $0
TOTAL DEDUCT.(L26,A)           $9640
FIL. STAT. 2,5(L27,A)          $3400
NET DEDUCT.(L28,A)             $6240
NET INCOME(L35) =              $9370
EXEMPTIONS(L36)                $3000
TAXIBLE INCOME(L37)            $6370
TAX(L38)                        $336.4
PERSONAL TAX CREDIT(L45)           $3
BUSINESS TAX CREDIT(L49)           $0
TOTAL TAX                       $315.4
FED TAX WITHELD(L57)            $450
"-"=REFUND:"+"=PAY            $-134.6
      ITEMIZED DEDUCTIONS

DR,DENT,INS$(L2a,A)               $500
MED. XPORTATION(L2b,A)             $60
OTHER MEDICAL(L2c,A)              $100
TOTAL MEDICAL(L5,A)               $660
ST/LOC. INC. TAX(L6,A)           $1600
REAL ESTATE TAX(7,A)             $1470
GENERAL SALES(L8,A)               $120
OTHER TAXES(L9,A)                   $0
TOTAL TAXES(L10,A)               $3090
MORT INTEREST(L11,A)             $2000
FINANCE CHARGES(L12,A)           $4000
TOTAL INTEREST(L14,A)            $6000
CONTRIBUTIONS(L16,A)              $200
CASUALTY, THEFT(L19,A)            $250
TOTAL MISCELLEN.(L23,A)           $100
ITEMIZED (W/O MED)               $9640
   RENT, ROYALTY, ETC INCOME

RENTAL INCOME(L3a,E)             $2400
RENT COMMISSION(L7,E)             $240
RENT INSURANCE(L8,E)              $100
RENT INTEREST(L9,E)               $300
RENT REPAIRS(L11,E)               $500
RENT TAXES(L13,E)                 $400
RENTAL EXPENSE(L17a,E)           $1540
RENT DEPRECIAT(L18,E)             $300
RENTAL COSTS(L19a,E)             $1840
NET RENT INCOME(L23)              $560
      SPOUSE INCOME TAX

LARGER INCOME(L1a,W)            $12000
ADJUSTMENT(L4a,W)                $1000
SMALLER INCOME(L1b,W)            $3000
ADJUSTMENT(L4b,W)                   $0
DEDUCTION(L8,W)                   $300
```

ERRATA

Line No.	Change
445	CLS:PRINT AT 2,0; vs PRINT
1010	OPERATION vs FORM
1090	add 30 spaces after V within quotes, and add: IF M=1 THEN PRINT AT 21,5;"YOU HAVE SELECTED FORM": FLASH 1;F$(F);FLASH 0
1105 (add)	IF M<1 OR M>7 THEN GO TO 1000
6120	
9140	enclose current computation with
9180	INT((current computation)*100)/100

```
   1 REM IR51040 1985 R. PARKER
     IRS2 © 1984 M. FISHER
BASED ON J.R. FLANNAGAN PROGRAM
   2 PRINT AT 21,0
   3 LOAD "IRS2"SCREEN$
   4 LOAD "IRS2"
   5 SAVE "IRS1040" LINE 2
```

```
      1985
1040 TAX PREPARATION
```

```
   1 REM IRS1040 1985 R U Parker
     IRS2 © 1984 M. FISHER
BASED ON J. R. FLANNAGAN PROGRAM
   2 REM
   3 REM
   4 PRINT AT 21,0;"   HIT ANY K
EY TO CONTINUE       ": PAUSE 4E4
   5 BORDER 5: PAPER 7: INK 1: C
LS
   6 LET NEW=1: LET YORN=700: LE
T SETUP=200: LET MENU=1000: LET
REST=800: DIM A(6): DIM F$(6): D
IM N$(6,64): DIM X(15): DIM P(15
): DIM I(15): DIM S(6): DIM D(6)
   7 RESTORE : GO SUB 9000: GO S
UB 5000
  10 GO TO MENU
  20 REM ********READ SUB*******
  30 FOR J=1 TO LEN R$
  40 IF R$(J)=";" THEN GO TO 60
  45 IF R$(J)="#" THEN GO TO 500
  48 IF R$(J)="&" THEN GO TO 600
0
  50 NEXT J
  60 LET P$=R$( TO J-1)
  70 LET R$=R$(J+1 TO )
  80 RETURN
  90 REM *******PRINT SUB*******
 100 LET POS=PR-LEN STR$ INT TR
 105 IF LPRINT>0 THEN GO TO 117
 110 PRINT TAB POS;P$(LEN P$);TR
 112 GO TO 120
 117 LPRINT TAB POS;P$(LEN P$);T
R
 120 POKE 23692,255
 140 RETURN
 150 REM ********INPUT**********
 160 INPUT TR
 170 GO SUB PRI
 180 RETURN
 190 REM ********SETUP**********
 200 LET READ=20
 205 LET POS=0: POKE 23658,0
 210 LET PRI=90
 215 LET PR=28
 220 DIM T(60)
 230 LET IN=160
 235 CLS : RESTORE
```

```
 240 REM *******MAIN LOOP*******
 260 FOR I=S(F) TO D(F)
 270 GO SUB READ
 275 IF LPRINT>0 THEN GO TO 287
 280 PRINT P$( TO LEN P$-1);
 282 GO TO 290
 287 LPRINT P$( TO LEN P$-1);
 290 IF P$(LEN P$)="F" THEN GO T
O 400
 300 GO SUB IN
 310 LET T(I)=TR
 320 GO TO 450
 400 GO SUB READ
 410 LET T(I)=VAL P$
 420 LET TR=T(I)
 430 LET P$="$"
 440 GO SUB PRI
 445 IF I=18 THEN PRINT : PRINT
"HIT ANY KEY TO CONTINUE": PAUSE
 4E4: PRINT
 450 NEXT I
 460 RETURN
 500 REM **** FORM SELECTION ***
*
 510 IF R$(J-1)="A" THEN GO TO 5
60
 520 IF R$(J-1)="E" THEN GO TO 5
90
 530 IF R$(J-1)="S" THEN GO TO 6
20
 540 IF R$(J-1)="U" THEN GO TO 6
50
 550 GO TO 50
 560 LET P$=R$( TO J-2): IF A(2)
 =2 THEN GO TO 580
 570 LET T(38)=0: LET T(50)=0
 580 GO TO 70
 590 LET P$=R$( TO J-2): IF A(3)
=3 THEN GO TO 610
 600 LET T(34)=0
 610 GO TO 70
 620 LET P$=R$( TO J-2): IF A(4)
=4 THEN GO TO 640
 630 LET T(8)=0
 640 GO TO 70
 650 LET P$=R$( TO J-2): IF A(5)
=5 THEN GO TO 660
 660 LET T(60)=0
 670 GO TO 70
 680 LET T(8)=T(60)
 690 GO TO 70
 700 REM **** GET Y OR N ******
 710 PRINT AT 21,0
 720 LET q$=""
 730 POKE 23658,0: INPUT u$
 740 POKE 23658,8
 750 IF u$=INKEY$ THEN GO TO 750
 760 LET q$=q$+u$
 770 IF q$="y" OR q$="n" THEN RE
TURN
 780 PRINT "KEY ""y"" OR ""n"""
 790 GO TO 720
 800 REM ******** REST *********
 810 PRINT : PRINT "HIT ANY KEY
TO RETURN TO MENU": PAUSE 4E4: C
LS : GO TO MENU
1000 REM ******** MENU *********
1010 CLS : PRINT AT 0,0;" 104
0 TAX RETURN PROGRAM",TAB 14;"ME
NU",,,"FIRST SELECT FORM (1),THE
N SELECT OPERATION (2-4 or 6)",,
,
1020 PRINT "SELECT FORMS A,E,SE,
T OR U   1",,,
1030 PRINT "ENTER NEW DATA";TAB
29;"2",,,
1040 PRINT "REVIEW OLD DATA";TAB
 29;"3",,,
1050 PRINT "CHANGE DATA";TAB 29;
"4",,,
1060 PRINT "DISPLAY RESULTS";TAB
 29;"5",,,
1070 PRINT "PRINT RESULTS";TAB 2
9;"6",,,
1080 PRINT "SAVE DATA";TAB 29;"7
",,,
1090 PRINT AT 20,0;TAB 6;"ENTER
MENU SELECTION","U"
1100 POKE 23692,255: INPUT M
1110 GO TO (1200+200*(M-1))
1200 REM *** FORM SELECTION ***
1210 CLS : PRINT " DO YOU WANT T
O WORK ON FORMS     A, E, SE, or
U (y OR n)": GO SUB YORN
1220 IF q$="y" THEN GO TO 1260
1230 CLS : PRINT " DO YOU WANT T
O WORK ON MAIN      FORM 1040? (y
 OR n)": GO SUB YORN
1240 IF q$="n" THEN CLS : GO TO
MENU
1250 LET A(1)=1: LET R$=T$( TO L
EN T$): LET F=1: CLS : GO TO MEN
U
1260 CLS : PRINT "INPUT FORM DES
IRED A E SE or U": INPUT I$
1270 FOR F=2 TO 5
1280 IF F$(F)=I$ THEN GO TO 1300
+10*F
1290 NEXT F
1300 PRINT AT 21,0;" SELECT FORM
 FOR WORK                INPUT A, E
, SE, or U": INPUT I$
1310 GO TO 1270
1320 LET R$=A$( TO LEN A$): LET
F=2: GO TO 1360
1330 LET R$=E$( TO LEN E$): LET
F=3: GO TO 1360
1340 LET R$=S$( TO LEN S$): LET
F=4: GO TO 1360
1350 LET R$=U$( TO LEN U$): LET
F=5
1360 CLS : LET A(F)=F: PRINT " Y
OU HAVE SELECTED FORM "; FLASH 1
;F$(F); FLASH 0
1370 GO TO REST
1400 REM ******* NEW DATA ******
1410 LET NEW=1: LET IN=160: LET
LPRINT=0
1420 CLS : PRINT " THIS MENU OPT
ION CAN ERASE ALL  FILES.  DO YO
U WANT TO DO THIS? (y OR n)"
1430 GO SUB YORN
1435 CLS : PRINT AT 0,0
1440 IF q$="n" THEN GO SUB 240:
GO TO REST
1445 PRINT 0,0
1450 LET NEW=0: GO SUB 190: GO T
O REST
1600 REM ******* REVIEW *******
1610 LET LPRINT=0: LET NEW=0
1620 CLS : PRINT AT 0,0: LET R$=
N$(F)+R$
1630 LET IN=1700
1640 GO SUB 240: GO TO REST
1700 LET TR=T(I)
1710 GO SUB PRI
1720 RETURN
1800 REM ******* REVISE *******
1805 LET NEW=1: LET LPRINT=0
1810 LET IN=1900
1820 CLS : PRINT "WANT TO REVISE
 FIGURES? (y OR n)"
1825 GO SUB YORN
1830 IF q$="n" THEN GO TO MENU
1840 CLS : PRINT AT 0,0: LET R$=
N$(F)+R$
1850 GO SUB 240: GO TO REST
1900 LET TR=T(I)
1910 GO SUB PRI
1920 PRINT " OK? (y OR n)"
1930 GO SUB YORN
1935 IF I-5(F)<18 THEN PRINT AT
I-5(F)+3,0
1936 IF I-5(F)>=18 THEN PRINT AT
 I-5(F)-15,0
1940 IF q$="y" THEN RETURN
1950 PRINT AT 21,0;"ENTER NEW VA
LUE": IF I-5(F)<18 THEN PRINT AT
 I-5(F)+2,24: GO SUB 150
1951 IF I-5(F)>=18 THEN PRINT AT
 I-5(F)-16,24: GO SUB 150
1955 IF I-5(F)<18 THEN PRINT AT
21,0;"                ": PRINT A
T I-5(F)+3,0
1956 IF I-5(F)>=18 THEN PRINT AT
 21,0;"                ": PRINT
AT I-5(F)-15,0
1960 RETURN
```

```
2000 REM ******* DISPLAY *******
2010 LET NEW=0: LET IN=1700: LET
 REST=2000: LET LPRINT=0
2020 CLS : PRINT "DO YOU WANT A
PRINT COPY? (y OR n)"
2030 GO SUB YORN
2040 IF q$="y" THEN LET LPRINT=1
2050 FOR F=1 TO 5
2060 IF A(F)=0 THEN GO TO 2090
2070 GO TO 2100+10*F
2080 PRINT : PRINT "HIT ANY KEY
TO CONTINUE": PAUSE 4E4: PRINT
2090 NEXT F
2100 LET REST=800: GO TO REST
2110 LET R$=T$( TO LEN T$): GO T
O 1620
2120 LET R$=A$( TO LEN A$): GO T
O 1620
2130 LET R$=E$( TO LEN E$): GO T
O 1620
2140 LET R$=S$( TO LEN S$): GO T
O 1620
2150 LET R$=U$( TO LEN U$): GO T
O 1620
2200 REM ******* LPRINT ********
2210 LET LPRINT=1
2220 CLS : LET R$=N$(F)+R$
2230 GO TO 1630
2400 REM ******* SAVE **********
2410 SAVE "IR52" LINE 1000
2420 CLS : GO TO MENU
4200 LET N$(1)="          1040 TAX C
ALCULATIONS                "
4210 LET N$(2)="          ITEMIZED D
EDUCTIONS                  "
4220 LET N$(3)="    RENT, ROYALTY
, ETC INCOME               "
4230 LET N$(4)="          SELF EMPL
OYMENT TAX                 "
4240 LET N$(5)="          SPOUSE INC
OME TAX                    "
4250 LET N$(6)="               UA STA
TE TAX                     "
4260 RETURN
4999 REM **** LOAD TABLES ******
5000 FOR K=1 TO 15
5010 READ X(K): READ P(K): READ
I(K)
5020 NEXT K
5025 FOR K=1 TO 5
5030 READ S(K): READ D(K): READ
F$(K)
5035 NEXT K
5050 REM MARRIED TAXPAYERS JOINT
        RETURNS TAX TABLE
5060 DATA 0,0,0,3400,.11,0,5500,
.12,231
5070 DATA 7600,.14,483,11900,.16
,1085,16000,.18,1741
5080 DATA 20200,.22,2497,24600,.
25,3465,29900,.28,4790
5090 DATA 35200,.33,6274,45800,.
38,9772,60000,.42,15168
5100 DATA 85600,.45,25920,109400
,.49,36630,162400,.5,62600
5110 DATA 1,24,"T",35,50,"A",25,
34,"E",51,55,"SE",56,60,"U"
5120 RETURN
6080 REM *****TAX CALCULATION***
6090 FOR K=15 TO 1 STEP -1
6100 IF T(18)>=X(K) THEN GO TO 6
130
6110 NEXT K
6120 LET K=1
6130 LET T(19)=(T(18)-X(K))*P(K)
+I(K)
5135 LET P$=R$( TO J-2): GO TO 7
5
8990 REM ******DATA SECTION*****
9000 LET T$="NO OF EXEMPTIONS(L6
,E) ;WAGES (L7)$;INTEREST INCOME(
L8)$;ST TX REFUND(L10)$;PENSION,
ROLOVERS(L17)$;"
9001 REM
9010 LET E$="RENTAL INCOME(L3a,E
)$;RENT COMMISSION(L7,E)$;RENT I
NSURANCE(L8,E)$;RENT INTEREST(L9
,E)$;RENT REPAIRS(L11,E)$;"
9011 REM
9020 LET E$=E$+"RENT TAXES(L13,E
)$;RENTAL EXPENSE(L17a,E)F;T(26)
+T(27)+T(28)+T(29)+T(30);RENT DE
PRECIAT(L18,E)$;RENTAL COSTS(L19
a,E)F;T(31)+T(32);NET RENT INCOM
E(L21)F;T(25)-T(33);"
9021 REM
9030 LET T$=T$+"TOTAL INCOME(L22
)FET(2)+T(3)+T(4)+T(5)+T(34);IR
A DEDUCTION(L25a)$;MARRIAGE DED.
(L29)$U#TOTAL DED.(L31)F;T(7)+T(
8);ADJ GROSS INC.(L32)F;T(6)-T(9
);"
9031 REM
9040 LET A$="DR,DENT,INS$(L4a,A)
$;MED. XPORTATION(L4b,A)$;OTHER
MEDICAL(L4c,A)$;TOTAL MEDICAL(L5
,A)F;T(35)+T(36)+T(37);"
9041 REM
9050 LET A$=A$+"ST/LOC. INC. TAX
(L8,A)$;REAL ESTATE TAX(L9,A)$;G
ENERAL SALES(L10a,A)$;OTHER TAXE
S(L11a,A)$;"
9051 REM
9060 LET A$=A$+"TOTAL TAXES(L12,
A)F;T(39)+T(40)+T(41)+T(42);MORT
 INTEREST(L13,A)$;FINANCE CHARGE
$(L14,A)$;TOTAL INTEREST(L16,A)F
;T(44)+T(45);"
9061 REM
9070 LET A$=A$+"CONTRIBUTIONS(L2
0,A)$;CASUALTY, THEFT(L21,A)$;TO
TAL MISCELLEN.(L25,A)$;ITEMIZED
(U/D MED)F;T(43)+T(46)+T(47)+T(4
8)+T(49);"
9071 REM
9080 LET T$=T$+"MEDICAL MIM.(L6,
A)F;INT (100*T(10)*.05)/100;MEDI
CAL DED.(L7,A)FA#(T(38)-T(11))*(
(T(38)-T(11))>0);TOTAL DEDUCT.(L
26,A)F;T(12)+T(50);"
9081 REM
9090 LET T$=T$+"FIL. STAT. 2,5(L
27,A)F;3400;NET DEDUCT.(L28,A)F;
(T(13)-T(14))*((T(13)-T(14))>0);
NET INCOME(L35)=F;T(10)-T(15);EX
EMPTIONS(L36)F;T(1)*1000;TAXIBLE
 INCOME(L37)F;T(16)-T(17);"
9091 REM
9140 LET T$=T$+"TAX(L38)FT&T(19)
;TAX CREDITS(L48)$;""BALANCE""(L
49)F;T(19)-T(20);"
9141 REM
9150 LET T$=T$+""""TOTAL TAX""F;T
(21);FED TAX WITHELD(L57)$;""-""
=REFUND;""+""=PAYF;T(22)-T(23)"
9180 LET U$="LARGER INCOME(L1a,U
)$;ADJUSTMENT(L4a,U)$;SMALLER IN
COME(L1b,U)$;ADJUSTMENT(L4b,U)$;
DEDUCTION(L8,U)F;(T(58)-T(59))*0
.1;"
9900 GO TO 4200
```

446 Year Calendar

by Jim Mackenzie

```
  10 REM "2"
  20 REM **** CALENDAR ****
  30 REM CHUCK DAWSON
  40 REM * SYNC 3.1 PG 34
  50 REM REVISED 22 DEC 84
  60 REM * JIM MACKENZIE
  70 REM THIS WORKS FOR THE YEAR
1753 TO 2199
  80 CLS
  90 FAST
 100 LET MONTH=250
 110 LET FULYR=340
 120 LET SEARCH=440
 130 LET GETYR=510
 140 LET PRMON=570
 150 LET STMON=730
 160 LET SETUP=830
 170 GOSUB SETUP
 180 IF E$<>"Y" THEN GOSUB MONTH
 190 IF E$="Y" THEN GOSUB FULYR
 200 PRINT TAB 0;,,,"TRY AGAIN?
"
 210 INPUT E$
 220 IF E$="Y" THEN RUN
 230 STOP
 240 REM
 250 REM *******MONTH***********
 260 PRINT AT 8,0;" INPUT MONTH
(ONLY THE FIRST","THREE LETTERS)
."
 270 INPUT B$
 280 GOSUB SEARCH
 290 IF B$="NO " THEN GOTO MONTH
 300 GOSUB GETYR
 310 GOSUB PRMON
 320 RETURN
 330 REM
 340 REM *** PRINT FULL YEAR ***
 350 GOSUB GETYR
 360 FOR G=3 TO 38 STEP 3
 370 LET B$=A$(G TO G+2)
 380 GOSUB SEARCH
 390 GOSUB PRMON
 400 COPY
 410 NEXT G
 420 RETURN
 430 REM
 440 REM ********SEARCH*********
 450 FOR M=1 TO 12
 460 IF B$(1 TO 3)=A$(3*M TO 3*M
+2) THEN RETURN
 470 NEXT M
 480 LET B$="NO "
 490 RETURN
 500 REM
 510 REM *******GET YEAR********
 520 PRINT AT 12,0;"ENTER A YEAR
BETWEEN 1753"," AND 2199."
 530 INPUT Y
 540 IF Y<1753 OR Y>2199 THEN GO
TO GETYR
 550 RETURN
 560 REM
 570 REM *******PRINT MONTH******
 580 CLS
 590 PRINT AT 3,8;B$;" ";Y
 600 PRINT AT 6,0;A$(39 TO )
 610 GOSUB STMON
 620 PRINT AT 8,Z*4;
 630 LET M=M+1
 640 GOSUB STMON
 650 IF Z=0 THEN LET Z=7
 660 FOR I=1 TO 31
 670 PRINT " ";I;" ";
 680 IF I<10 THEN PRINT " ";
 690 IF I>27 AND 33-PEEK 16441=Z
*4 THEN RETURN
 700 IF PEEK 16441=5 THEN PRINT
,,,
 710 NEXT I
 720 REM
 730 REM ***START PRINT MONTH***
 740 LET X=0
 750 IF M=1 OR M=2 THEN LET X=1
 760 LET L=Y-X
 770 LET X=M+X*12
 780 LET P=INT (L/100)
 790 LET Z=INT (13*(X+1)/5)+INT
(5*L/4)+INT (P/4)-P
 800 LET Z=Z-7*INT (Z/7)
 810 RETURN
 820 REM
 830 REM ******* SETUP *********
 840 LET A$="CDJANFEBMARAPRMAYJU
NJULAUGSEPOCTNOVDECSUN MON TUE W
ED THU FRI SAT"
 850 DIM B$(3)
 860 DIM E$(1)
 870 PRINT AT 4,0;"PRESS ""M"" F
OR A MONTHS DISPLAY, OR ""Y"" FO
R A YEARS PRINTOUT."
 880 PAUSE 4E4
 890 LET E$=INKEY$
 900 RETURN
```

Ed. note

Is this program easy to understand? If you think so, try writing modular programs yourself. (This is the most modular I've seen in a while.) Using variables for <u>all</u> GOTOs makes the flow easier to follow, and makes renumbering a breeze.

MCI Mail

The nation's new postal system.

Sarah,

This letter is being sent as per our conversation concerning the spectrum ROM's. I am willing to organize a group buy, and if twenty people or more are interested, we can get them for about $12.00 apiece. I have sent for them in the past and know who, what and where to go so there will be no hassle. I also saw that quite a few people were hesitant about making the modification to their machine. As I have done this a number of times I am willing to do it for whoever would want me to. The total cost to the owner will be $15.00 for the work and I will supply all the parts, except the ROM. I will even go as far as to say that I have seen absolutely no problems when the conversion is done, and the 2068 is also a Spectrum. The total conversion will take less than an hour, and it can be running the same day it is done.

If needed, I will be glad to present this to the club at the next meeting, and if they can get moving, it can be accomplished by the following meeting. If you have any questions call me at 765-5455 W, or, 360-7448 H.

Sincerely,

Peter Geller
7912 Fitzroy St.
Alexandria, VA. 22309

Capitol Area Timex/Sinclair Users' Group
P.O.Box 725
Bladensburg, MD 20710

Name ____________________

Address ____________________

____________________ ZIP __________

Phone Home __________ Office __________

Memberships - $15.00 (family/individual); make checks payable to C.A.T.S.

If family membership, please list family members participating:

____

Occupation ____________________

Ham Radio call sign ____________________

Equipment

ZX 80 __________ RAM size __________

MA 80 __________ full keyboard __________

ZX 81 __________ Printer __________

TS 1000 __________ type __________

TS 2000 __________ other interface __________

Special interest use for computer: ie, games, ham radio interface, business, other, etc. ____________________

____

Languages: Basic __________ Other __________

Machine __________ __________

No. of years computer experience __________

What committees would you like to serve on? __________

____

Comments: ____________________

____

- -

Do not write below:

Dt. Pd. __________ Amt. __________ Membership No. __________

Ca. __________ Ck. __________

The mailing address of the Capitol Area Timex/Sinclair User's Group is:

Capitol Area Timex/Sinclair User's group
P.O. Box 725
Bladensburg, MD 20710

CATS is a non-profit special interest organization dedicated to serving the interests of those who own, use, or are interested in learning more about the Timex/Sinclair family of personal computers.

The official contact person for CATS is JULES GESANG:
301*922-0767

Meetings are held on the second Saturday of each month at 2 P.M. in the large meeting room of the New Carrollton Branch Public Library.

Ham Radio Network Information
QZX Net...Wednesdays, 9p.m. local time; 14.345 MHz NVAF NCS
Eastern Regional Sinclair Net...Sundays, 1600 Z; 7.245 MHz
KQ2F NCS

CATS Newsletter
P.O. Box 725
Bladensburg MD 20710

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Next CATS Meeting.....2:00 P.M.
Saturday, February 9, 1985 (Warm enough for you?)
New Carrolton Public Library
7414 Riverdale Road, New Carrolton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECIEVE
Dues = $15.00 per year, per family.

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